



## Estimation of on-farm interventions to control *Campylobacter*

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## Control strategies for *Campylobacter* (sponsored by the UK Society for Applied Microbiology) Wednesday 4th November

1000-1040

O097

### **Estimation of on-farm interventions to control *Campylobacter***

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Before making risk management decisions to control *Campylobacter* prevalence in broiler flocks, it is useful to identify effective interventions. A given risk factor may seem to have a large effect, but in practice interventions related to this risk factor may have only limited effect due to a relative small proportion of the farms that can actually be intervened for the given risk factors. We present a novel tool for risk assessors to obtain such estimates of the effect of interventions before it is implemented at the farms. A statistical method was developed in order to estimate the flock prevalence if an intervention was to be implemented in a given population of broiler farms. The method is anchored in the ideas behind standardized population estimations. In order to obtain a country wise population estimate the predicted prevalence values are multiplied with elements from a reference population. In the present study risk factor estimates from a European study was used and the reference population consisted of data from the risk factor study plus extra data from a large questionnaire survey to improve the representativeness of the reference population. The results showed that some individual interventions gave only a limited reduction in prevalence if the biosecurity was not accounted for. Furthermore, the effect of the interventions differed between countries, depending on current farm management practices and *Campylobacter* prevalence. The most effective interventions were "building new houses with strict biosecurity for all houses older than 15 years" and "apply drinkers with nipples without cups".

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O098

### **The efficacy of broiler farm boot-dip disinfectants against *Campylobacter jejuni***

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*Campylobacteriosis* is a common cause of bacterial enteritis and scientific opinion suggests that 50% to 80% of cases are attributed to the chicken reservoir. Reducing *Campylobacter* colonisation in chicken flocks could help lower the burden of disease to society. Disinfectant boot-dips at access points to broiler flocks are associated with a reduced risk of flock colonisation. The type of disinfectant and how it is used varies and it is known that, after dilution, disinfectants may lose efficacy over time, and may also become inactivated by organic matter. This study aimed to assess the suitability of disinfectants for use in boot-dips as on-farm *Campylobacter* controls. Twelve products that covered the main disinfectant classes used on farms were selected for testing. A disinfectant boot-dip model was created to simulate use through daily loading with poultry litter and to assess the effect of contact time. A test method for disinfectant efficacy against *Campylobacter* (based on BS6734:1986) was developed for this study. All products were effective (>4 log<sub>10</sub> *Campylobacter* reduction) after a 30 minute contact time in clean boot-dips; however a shortened contact time or increasing contamination of boot-dips with poultry litter resulted in some products becoming ineffective. After seven days of simulated boot-dip usage (with litter loading), only chlorocresol products remained effective at the one minute contact time. In conclusion, different disinfectant groups vary in the time needed to inactivate *Campylobacter* and resistance to interference by organic matter. These properties should be considered when selecting and managing boot-dips for optimal *Campylobacter* control.

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